

REMARKS

This Amendment is submitted in response to the non-final Office Action mailed on September 30, 2009. A petition for a one month extension of time is submitted herewith. The Director is authorized to charge any additional fees which may be required, or to credit any overpayment to Deposit Account No. 02-1818. If such a withdrawal is made, please indicate the Attorney Docket No. 3716072-002 on the account statement.

Claims 8-23 are pending in this application, with claim 13 withdrawn from consideration. In the Office Action, Claims 8-12 and 14-23 stand rejected under 35 U.S.C. §103. Claims 21 and 23 also stand rejected under §112, first paragraph. In response, Applicant has cancelled claims 21 and 23 and has added new Claims 24-30. Support for these claims can be found throughout the specification and at least at paragraphs [0008], [0015], [0016], and [0026]. These claims do not add new matter. For at least the reasons set forth below, Applicant respectfully submits that the rejections should be withdrawn.

Applicant acknowledges and thanks Examiner Nguyen for his time and efforts in the telephonic examiner interview of January 20, 2010. While no agreement was reached regarding the claims, the discussion during the telephone call was very helpful. The response presented herewith embodies the discussions held during that telephone call.

In the Office Action, claims 8, 9, 11, 14, 15, and 17-19 are rejected under §103(a) as obvious over Wakiya (WO2002-035555, with the English equivalent US 2004/0109995 being cited.) In the rejection, the Patent Office generally cites the abstract [0005]-[0008], [0012], [0015]-[0018],[0030] and the Examples. The Patent Office also emphasizes paragraph [0038], in which the method of introducing a polymerizing group C is discussed specifically. Based on the discussions during the telephonic interview, Applicant understands the Patent Office's position to be the following. First, although Wakiya discusses methods, the resulting product of those methods is the relevant point. If Wakiya and the Applicant uses two different methods, but the methods lead to the same product, then Wakiya is relevant as prior art. Applicant does not disagree with this rule. Second, Wakiya discloses at paragraph [0038] introducing a compound having a functional group (A) (which binds to metal and can include a carboxyl) that is connected to a reactive functional group (B). (B) is then reacted with a compound capable of forming a covalent bond with (B), and that compound has a polymerizing or chain transferring functional group (C). The list of groups that can encompass (C) is disclosed in paragraph [0030]

and includes aziridines. (C) is then polymerized. Paragraph [0025]. The result, according to the Patent Office, would make obvious the claimed invention.

Applicant respectfully disagrees and asserts that the method disclosed in Wakiya would not lead to the products claimed in the application. First, as Applicant reads Wakiya, the result of the method disclosed in [0038] would lead to an A-B-C compound bound to the metal. Group (C) is then chain polymerized, in the case of aziridine to form a polymer. This product does not read on the claimed invention. Independent claims 8 and 14 both require that the particle is coated with an insulating resin and that the resin is surface-treated with a polyfunctional aziridine. As a result, the claimed particles have a resin layer that has been crosslinked during the reaction of the polyfunctional aziridine and carboxyl groups in the resin. One of ordinary skill in the art would recognize that the term "resin" as discussed in the application to mean polymeric compounds, and this is supported in paragraphs [0014], [0017] and the Examples. After surface-treatment of the particles with the polyfunctional aziridine, the insulating resin has then been cross-polymerized on the surface of by the polyfunctional aziridine. This leads to a polymer material with a surface that has been crosslinked. In contrast, the polymerization of aziridine end-groups in Wakiya gives a polymer that has not been surface-treated with aziridine, but instead is only a polymer containing polymerized aziridine and no additional surface treatment.

The Patent Office further asserts that limitations with dependent claims 9, 11, 12, 14, 15, and 17-19 are also met by Wakiya, including specifically acrylic acid-styrene, epoxy and poly(meth)acrylic acid resins, citing [0021]. Applicant respectfully asserts that the Patent Office is improperly picking and choosing elements from Wakiya that cannot be applied together. Specifically, in order to achieve support for aziridine as discussed above, the Patent Office is limited to the aziridine end-group and to preparing polyaziridines with Wakiya. If the Patent Office were to rely on Wakiya to achieve polyacrylics or the like, then the end group (C) in the A-B-C configuration above would be the acrylic, which is this polymerized to make the polymeric compound. Note that acrylics and aziridines both appear in [0030] as the monomer groups, so Wakiya can not teach a compound having both polyacrylic linkages and a compound having polyaziridine linkages.

This analysis again reemphasizes why Applicant views the claimed invention as being distinct from Wakiya. Applicant prepares a particle with an insulating resin. The resin contains carboxyl groups, and is described in the dependent claims as having, for example, acrylic acid

monomer units. The polymeric resin is then further surface-treated with a polyfunctional aziridine to achieve a crosspolymerization of the surface-treated resin. In contrast, Wakiya is preparing monomers that bind to the surface of the particle and then polymerizing the monomers while on the surface to prepare a coating. A resin in Wakiya is not prepared and subsequently surface-treated, but is only polymerized.

In the Office Action, claims 10, 16, 20 and 22 are rejected under 103(a) as being unpatentable over Wakiya in view of JP08-325543 ("Soken Chem"), JP09-030112 ("Mitsubishi") or U.S. 3,985,920 ("Travis"). In response Applicant asserts that nothing within these references cures the deficiencies present within Wakiya. None of the references present an insulating resin containing a carboxyl, nor the surface-treatment of that resin with polyfunctional aziridines. The Patent Office relies on Soken Chem, Mitsubishi and Travis merely for the disclosure of specific aziridine compounds and using aziridines as crosslinking agents. Because these references do not remedy the deficiencies within Wakiya, Applicant asserts that the rejection of claims 10, 16, 20 and 22 is improper and should be withdrawn.

Applicant asserts that base independent claims 8 and 14 are each novel and non-obvious over the asserted references. However, based at least upon the discussions with the Examiner during the telephonic interview, Applicant offers for consideration dependent claims 24-30. These dependent claims further differentiate the claimed invention from Wakiya, in particular the amount of carboxyl and the thickness of the resin. Applicant respectfully asks for consideration of these dependent claims in any subsequent office action.

For at least the reasons set forth above, Applicant asserts that the claimed invention is novel and non-obvious over Wakiya and the other cited references. Applicant respectfully submits that the present application is in condition for allowance and earnestly solicit reconsideration of same.

Respectfully submitted,

K&L GATES LLP

BY 

Thomas C. Basso
Reg. No. 46,541
Customer No. 24573

Date: January 29, 2010